

Mitt.Bot.München 16	p. 485 - 492	30.9.1980	ISSN 0006-8179
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TWO NEW SPECIES OF BLYXA (HYDROCHARITACEAE)

by

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During a study of the freshwater genera of the Hydrocharitaceae two new species of *Blyxa* have been found among extant herbarium material.

Blyxa hexandra C.D.K. COOK et R. LÜÖND, species nova (figure 1).

Diocea; caulis cormus. Folia radicalia, linearia, usque ad 21 cm longa, haud ultra 2.5 mm lata; lamina ad apicem subacutum sensium contracta, costa inconspicua, venis lateralibus carentibus vel duabus inconspiciis. Spathae pedunculatae; pedunculus plerumque longior quam folia. Spatha mascula 3.25-4.6 cm longa, flores pedicellatos 20 vel ultra includens. Flos masculus sepalis 4-5.5 mm longis; petala mascula 10-13.5 mm longa, longitudinaliter trisulcata, papillis polliniferis. Stamina 6, biverticillata. Grana pollinis $44.5 \pm 5.5 \mu\text{m}$ diametro. Spatha feminina 4.5-7 cm longa, florem unum includens. Flos femininus calyce 4.5-7 mm longa, stigmatibus usque ad 15 mm longis, adaxialiter papillosis; staminodia tria. Semina fusiformia vel leviter unicaudata, 2-2.5 mm longa, testa laevi.

Type: Angola, Prov. Benguela, Cassipera, 30 km from Chicuma in the direction of Capala, alt. 1750 m, 1 May 1952, Hess 52/1483 (holotype: Z; isotypes: BM, Z, ZT).

Blyxa hexandra is like the Asian species *B. octandra* (ROXB.) PLANCHON ex THWAITES and *B. quadricecostata* DEN HARTOG but differs in having leaves almost translucent with a faint midrib and a flat (not hooded), spineless leaf apex; stamens 6; pollen grains $44.5 \text{ s.d.} \pm 5.4 \mu\text{m}$ diam.; seeds fusiform

with one short, straight or curved beak, (1.5 -) 2.0-2.5 mm long (including the beak), smooth or rarely weakly tuberculate.

From somewhat limited information on herbarium labels it would seem that *B. hexandra* is an annual usually found in shallow, still water in temporary pools. From the floral structure the pollination biology is probably similar to that of *B. octandra*.

Blyxa hexandra is found in tropical southern Africa between about 0° and 20° S. It is common in western Angola and around Lake Tanganyika in Zaire, Burundi, Tanzania and Zambia (fig. 2). It is rather remarkable that this well collected, widely distributed and taxonomically distinct species has never before been formally described in spite of the fact that it frequently bears "sp. nov.?" on the herbarium label.

SPECIMENS SEEN.

ANGOLA: Prov. Luanda: Distr. Malange, 1903, GOSSWEILER 913 (K, P); *ibid.*, 24 Sept. 1932, YOUNG 876 (BM). Prov. Cuanza Sul: Bach 13 km nördl. Quibala an Straße nach Calulo, 1250 m, 7 March 1952, HESS 52/909 (Z, ZT). Prov. Benguela: Straße nach Nova Lisboa (Huambo), nach Abzweigung zur Missao cat. da Ganda (Vila Mariano Machado), 1250 m, 5 Dec. 1951, HESS 51/187 (Z, ZT); Cassipera, 30 km v. Chicuma Richtung Capala, 1750 m, 1 May 1952, HESS 52/1483 (BM, BR, Z, ZT). Prov. Huambo: (?) Tjiasu-Cumba, 1650 m, 21 April 1960, BATISTA DAMANN (Z). Prov. Bié: Silva Porto-Andulo, km 35, 15° 45' E. - 12° 09' S., 1700 m, 15 March 1973, BAMPs, MARTINS & MAIA 4159 (BR, K). Prov. Cuando Cubango: River (?) Cubango, 27 June 1903, GOSSWEILER 913 (BM).

ZAIRE: Prov. Shaba: Distr. Kasenga, 1,5 km à l'est de Kabiashia (Dembo Kandale), 1005 m, 9 April 1967, MALAISSE 5111 (BR, K); Katanga, Parc National de l'Upemba, près piste (?) Lusinga-Mitirane, 11 May 1949, DE WITTE 06330 (BR); *ibid.* 11 May 1949, DE WITTE 06340 (BR). Locality unknown: Dembo, 2 May 1912, WELGELEGEN 359 (BR).

ZAMBIA: Luapala Distr.: Samfya, Lake Bangweulu, ca. 1300 m, 8 Oct 1947, GREENWAY & BRENAN 8183 (BM, K, PRE). Mbala (Abercorn) Distr.: locality uncertain: Kali dambo, 1670 m, 16 May 1955, RICHARDS 5743 (K). Northern Distr.: 61 km W. of Isoka, 1400 m, 12 Aug. 1966, GILLET 17421 (BM, K); Mweru Wantipa road from Bulayo, 1050 m, 9 April 1957, RICHARDS 9111 (K).

TANZANIA: Ruvuma Distr. (Songea): Kwamponjore Valley, 1000 m, 14 March 1956, MILNE-REDHEAD & TAYLOR 9165 (B, K).

BURUNDI: Ruyigi Distr., Kinyingy, 1300 m, 27 March 1971,
LEWALLE 5400 (BR, K).

Blyxa vietii C.D.K. COOK et R. LÜÖND, species nova (figures 3&4).

Dioeca vel fortasse monoeca. Caulis teres, flaccidus, irregulariter ramosus. Folia caulina, aequaliter disposita ad caulem sed apicem versus approximata; linearia - triangularia vel lanceolata, usque ad 40 mm longa et ca. 1 mm lata; basi subamplexicauli, sensim contracta ad apicem acutum; costa conspicua; margo serratus, dentibus pluricellularibus spina unicellulare coronatis. Spatha mascula subsessilis vel pedunculo usque ad 4 cm longo, cylindracea, 2-3.7 cm longa, 8 flores vel ultra includens. Flores masculi pedicellati. Sepala mascula c. 4 mm longa, c. 1 mm lata, translucencia, subviolacea. Petala mascula alba, linearia - lanceolata, basi parum contracta, c. 10 mm longa et 1 mm lata, patentia; non conspicue sulcata, papillis minutis polliniferis tecta. Stamina 9, inter se subaequalia; filamenta c. 1 mm longa; antherae c. 2 mm longae, filamentis non distinctae. Grana pollinis globosa, echinata, $28.4 \pm 1.7 \mu\text{m}$ diametro. Pistillodia trilobata, c. 0.8 mm longa. Spatha feminina pedunculo usque ad 10 cm longo, anguste cylindrica, 5.5-6 cm longa, florem unicum includens. Flos femininus sessilis, hypanthio usque ad 5 cm longo. Sepala feminina 5 - 6 mm longa, 1 mm lata, translucentia, subviolacea. Petala feminina alba, filiformia, stigmatibus adhaerentia eademque longitudine. Stigmata alba, apicibus violaceis, linearia, c. 12 mm longa, parte tertia distali papillosa. Capsula cylindrica, 2 - 3 cm longa. Semina fusiforma, c. $0.8 \times 0.3 \text{ mm}$, porcis longitudinalibus binis oppositis.

Type: Vietnam, Ban Me Thout, Nov. 1967, VU-VAN-CUONG 1046 (holotype: P).

NOTES

Flowers unisexual; stems elongate, flaccid; leaves cauline, less than 4 cm long with distinctly serrate margins and expanded and sheathing leaf bases; male petals c. 10 mm long, finely papillose; stamens 9, equal in length, c. 3 mm long; pollen $28.4 \text{ s.d.} \pm 1.7 \mu\text{m}$ diam.; stigmas not petaloid, less than the distal third papillose; seed fusiform, c. 0.8 mm long, c. 0.3 mm wide, with 2, opposite, fine, longitudinal ridges.

This species is known from a single gathering. It shows some affinities to *B. novoguineensis* in habit but is morphologically distinct on numerous vegetative and floral features.

Figure 1. - *Blyxa hexandra* Cook & Lüönd (a-b, HESS 52/1482 - Z; c-f, HESS 52/1483 - Z); a, male plant (scale: 5 cm); b, female plant (scale: 5 cm); c, male flower, opened while in bud (scale: 2 mm); d, leaf apex (scale: 0,2 mm); e, leaf margin (scale: 0,1 mm); f, seeds (scale: 1 mm).

Figure 2. - The distribution of *Blyxa hexandra* Cook & Lüönd.

Figure 3. - *Blyxa vietii* Cook & Lüönd (VU-VAN-CUONG 1046 - P); a, male branch (scale: 1 cm); b, female branch (scale: 1 cm).

Figure 4. - *Blyxa vietii* Cook & Lüönd (VU-VAN-CUONG 1046 - P); a, female flower (scale: 2 mm); b, male flower (scale: 2 mm); c, seeds (scale: 1 mm); d, leaf (scale: 5 mm); e, central part of leaf (scale: 1 mm); f, leaf margin (scale: 10 mm).

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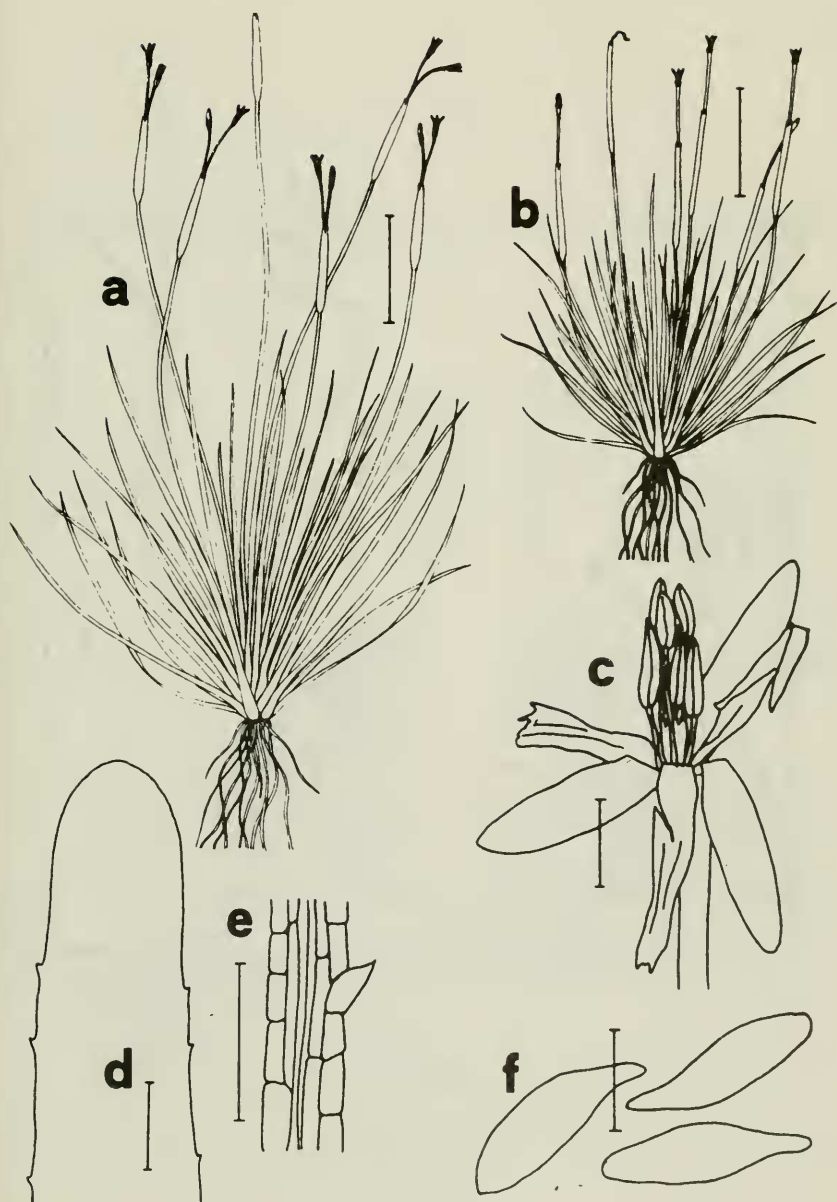


Fig. 1

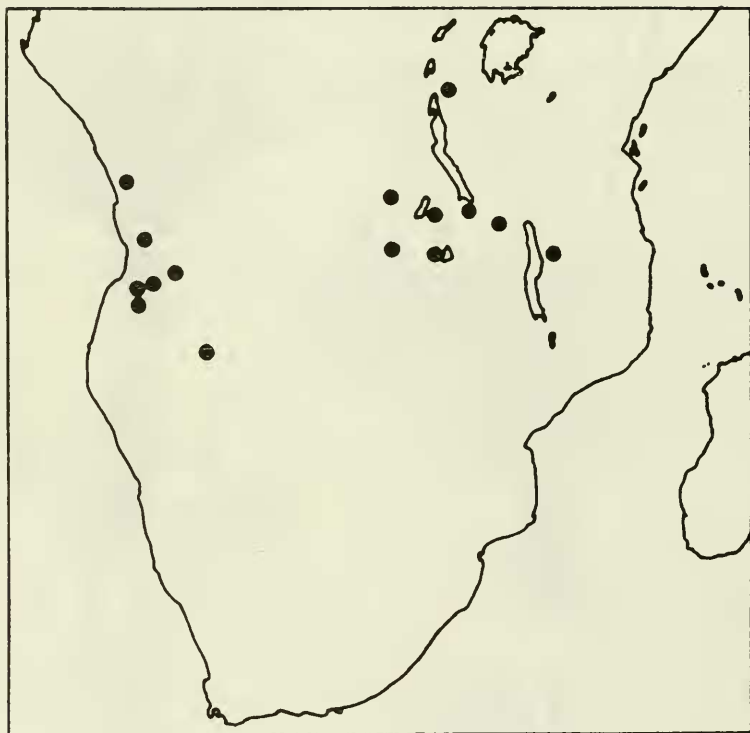


Fig. 2



Fig. 3

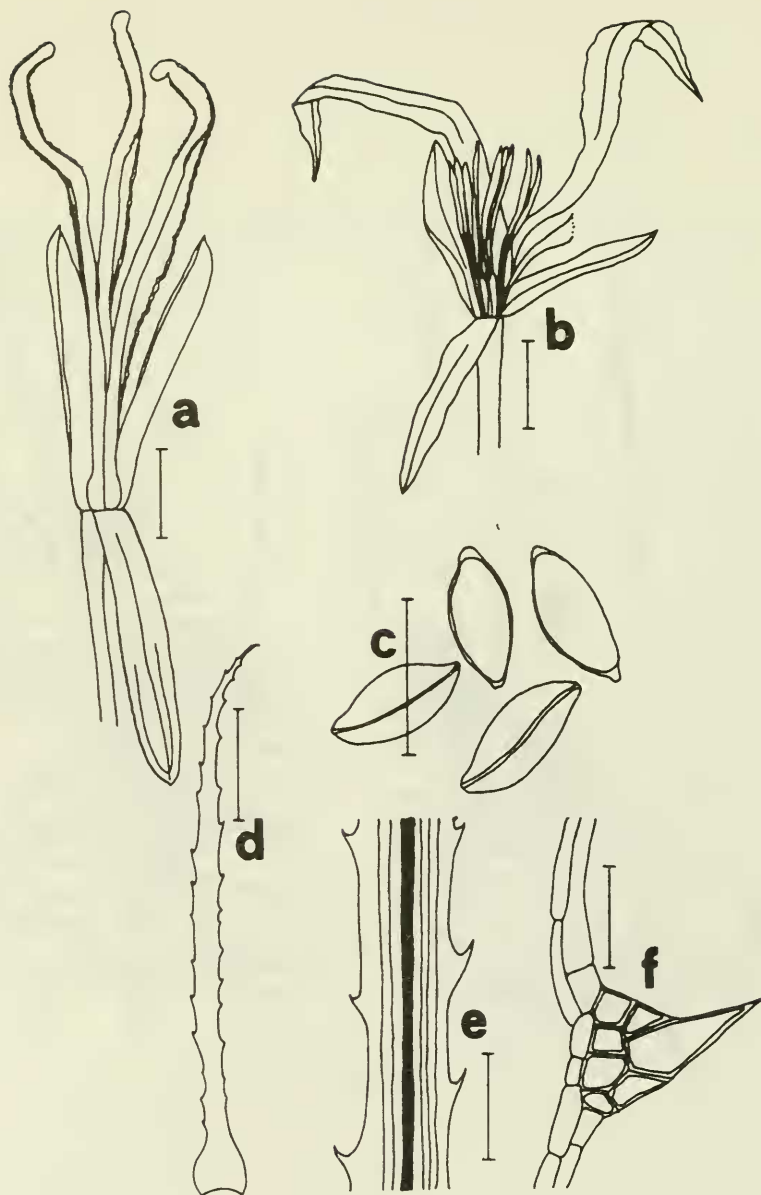


Fig. 4